

REMARKS

The Examiner has objected to the disclosure because paragraph [0001] recites “Update” instead of “Uptake.” This paragraph has been amended in accordance with the Examiner’s suggestion.

The Examiner has objected to the specification as containing sequence listings that are not accompanied by SEQ ID NOs. As restated in MPEP 2422, 37 CFR 1.821, only nucleotide sequences with ten or more nucleotides are specifically encompassed within the rules. Accordingly, this objection should be withdrawn.

The Examiner has also objected to the specification as including the trademark TWEEN 20 without proper capitalizing the trademarked name or accompanying the trademarked name with generic terminology. The specification has been amended to capitalize TWEEN 20 and to include the generic terminology “Polysorbate 20.” Accordingly, this objection should be withdrawn.

The Examiner has stated that she has not taken into account the documents cited in the specification towards fulfilling the enablement, written description or best mode requirements. The Examiner is reminded that these requirements are determined from the view point of one of ordinary skill in the art. The cited documents show examples of information that is available to one of ordinary skill in the art, and accordingly, should be considered by the Examiner for this reason.

Claims 1, 4-20, 22 and 23 stand rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention. Specifically, the Examiner finds the term “surface stress property” as used in the claims indefinite. The surface stress property of the cantilever is a measure of the deflection of the cantilever and is a property that is well known in the art. For example, attached is an abstract for an article entitled “Quantitative Surface Stress Measurements Using a Microcantilever” by Michel Godin et al. This article shows that one of ordinary skill in the art at the time the invention was made would be aware of the surface

stress property and a variety of ways in which it can be measured. Accordingly, this rejection should be withdrawn.

The Examiner has rejected claims 1, 4-20, 22, and 23 under 35 USC 112, second paragraph, as lacking written description. Specifically, the Examiner states that the examples do not show determining a sequence of nucleic acids of any length. The Examiner's rejection is contrary to clear case law, which makes state that Examples of every possible combination is not necessary. Indeed, the Federal Circuit has stated that there is no requirement for any examples at all. Specifically, in *Falkner v. Inglis*, 448 F.3d 1357, 1366 (Fed. Cir. 2006), the Federal circuit held:

Specifically, hold, in accordance with our prior case law, that (1) examples are not necessary to support the adequacy of a written description (2) the written description standard may be met (as it is here) even where actual reduction to practice of an invention is absent; and (3) there is no per se rule that an adequate written description of an invention that involves a biological macromolecule must contain a recitation of known structure.

The specification describes methods in which nucleotides are added to a sequence and then identified by the amount of surface stress they add to the cantilever. This process applies equally to the first nucleotide added to the cantilever or the 555. Accordingly, one of ordinary skill in the art would recognize that applicants had possession of the full scope of the claimed invention.

The Examiner has rejected claims 1, 4-20, 22 and 23 under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner states that the claims are not enabled because not all of the claimed method steps are shown in the Examples. As stated above, there is no requirement that a patent application have any examples at all. The whole specification, not just the examples, is relevant to written description and enablement. The specification as a whole, which includes the Examples, would enable one of ordinary skill in the art to practice the invention. Since the Examiner has not taken into account the whole specification and the relevant skill in the art in rejecting the claims as non-enabled, this rejection should be withdrawn.

Claims 1, 4-20, 22 and 23 stand rejected under 35 USC 102(a) as being anticipated by Allen. This rejection is respectfully traversed.

Independent claims 1 and 15 have been amended for clarity. Please note that as recognized by the courts and as defined in the specification paragraph [0019] “a” and “an” may mean one or more items. In addition, claims 1 and 15 have been amended to specify “synthesizing complementary nucleic acid from a labeled nucleotide to the attached template nucleic acid molecule.” The template nucleic acid molecule is attached to the structure. Accordingly, the complementary nucleic acid is attached to the template nucleic acid molecule, which is attached to the structure. The surface stress property of the structure is used to identify the incorporated nucleotides that are attached to the structure through the template nucleic acid molecule.

Allen describes a typical atomic force microscope (AFM). The AFM microscope includes a cantilever probe that is deflected by a sample in one of two manners. The probe cantilever can be operated in contact mode, where the “cantilever deflection is monitored as the probe tip is dragged over the sample surface” or “tapped” over the surface of the sample. See Allen, col. 2, lls. 11-37. Alternatively, the probe cantilever can be operated in non-contact mode where Vand der Waals’ attractive forces are used to “shift the cantilever resonance frequency when the probe tip is brought within a few nanometers of the sample surface.” See *id.* Unlike the claimed methods the nucleotides are never attached to the cantilever probe or synthesized on the cantilever probe.

Since Allen fails to disclose the claimed methods, this rejection of claims 1, 4-20, 22 and 23, should be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is

determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **070702009320**.

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~~Respectfully submitted,~~

~~By~~

~~Jonathan Bockman~~

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Quantitative surface stress measurements using a microcantilever

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A method for calculating the surface stress associated with the deflection of a micromechanical cantilever is presented. This method overcomes some of the limitations associated with Stoney's formula by circumventing the need to know the cantilever's Young's modulus, which can have a high level of uncertainty, especially for silicon nitride cantilevers. The surface stress is calculated using readily measurable cantilever properties, such as its geometry, spring constant, and deflection. The method is applicable to both rectangular and triangular cantilevers. A calibration of the deflection measurement is also presented. The surface stress measurement is accurate to within 4%–7%. ©2001 American Institute of Physics.

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